REMARKS / ARGUMENTS

A) Rejection of claims 1-14, 36 and 39-43 under 35 U.S.C. §112

In the Office Action, the Examiner has rejected claims 1-14, 36 and 39-43 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. More specifically, the Examiner has found that the subject matter of "extracting a portion of the contents of the respective packet to serve as the packet identifier, wherein *the portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet*" was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Firstly, the Applicant respectfully disagrees with this rejection and submits that support for the above-identified subject matter exists in the specification as originally filed, such that the application is in fact in full compliance with the written description requirement. The Examiner's attention is directed to page 8, line 30, to page 10, line 4, of the specification, where it is described that packet identification is achieved by inspecting *a part or all* of the packet's existing contents, in order to *find a bit sequence that is sufficiently unique* such as to allow to distinguish the packet from other packets. Furthermore, it is described that the particular packet part or section looked at can be *arbitrarily set*, it being possible that the entire packet serve as the packet identifier, rather than simply a portion of the packet. The Applicant respectfully submits that one skilled in the relevant art would understand the above-specified passage of the description to unambiguously suggest that the portion of the contents of the packet extracted to serve as the packet identifier is not specifically designated for packet identification purposes within the packet. Although not explicitly stated in the description, the claimed subject matter implicitly arises from that which is described. As

such, the inventors were clearly in possession of the claimed invention at the time the application was filed.

Secondly, the Applicant respectfully traverses this rejection, on the grounds that the Examiner made no such rejection in the Final Office Action dated January 26, 2004. At that time, the Examiner had had the opportunity to consider the language of the claims as amended in the response filed by the Applicant on November 7, 2003 and yet did not raise any rejection under 35 U.S.C. §112. Since the Applicant has not amended the language of the claims since the filing of the response on November 7, 2003, the Applicant was very surprised by the Examiner's rejection under 35 U.S.C. §112 in the Office Action mailed September 8, 2004. The Manual of Patent Examining Procedure (MPEP) clearly states in section 707.07(g) that a *piecemeal examination* "should be avoided as much as possible" and the Examiner is respectfully requested to consider whether the above-described circumstances of examination qualify as such.

In light of the foregoing, the Examiner is requested to withdraw the rejection under 35 U.S.C. §112. It is believed that claims 1-14, 36 and 39-43 are in full compliance with the written description requirement under 35 U.S.C. §112.

B) Rejection of claims 1, 8, 36 and 39-43 under 35 U.S.C. §102(b) and of claims 2-7 and 9-14 under 35 USC §103(a)

In the Office Action, the Examiner has reiterated his rejection of claims 1, 8, 36 and 39-43 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,337,313 (hereinafter referred to as Buchholz et al.). The Examiner has also reiterated his rejection of dependent claims 2-7 and 9-14 under 35 U.S.C. §103(a) as being unpatentable over Buchholz et al. in view of U.S. Patent 6,483,805 (hereinafter referred to as Davies et al.). As discussed below, the Applicant continues to disagree with these rejections and submits

that the claims of the present application distinguish clearly and patentably over the cited prior art references.

The invention claimed in the present application is directed to a device and method for ensuring flow control of an aggregate stream between two points in a data network, and more specifically for determining if packets are being dropped such that the flow can be regulated accordingly. Unlike prior art methods, this flow control is effected without having to add marking data to each and every packet of the aggregate stream, resulting in a more efficient bandwidth use.

The Examiner's attention is now directed towards the following limitations of claims 1 and 36 [emphasis added]:

1. A transmission device [...] comprising:
[...]
– a control unit operative to:
 a) **generate for each packet** of each aggregate traffic stream passing from said input to said output **a unique packet identifier** for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
 b) [...]
 c) forward the aggregate traffic streams to the destination point **without adding any data elements to the packets of the aggregate traffic streams.**

36. A transmission device [...] comprising:
[...]
– control means operative to:
 a) **generate for each packet** of each aggregate traffic stream passing from said input means to said output means **a unique packet identifier** for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
 b) [...]
 c) forward the aggregate traffic streams to the destination point **without adding any data elements to the packets**

of the aggregate traffic streams.

As stated by the Applicant in the previous response filed on April 1, 2004, Buchholz et al. do not disclose, teach nor suggest the above-emphasized limitations of claims 1 and 36. More specifically, Buchholz et al. do not disclose: (1) "generat[ing] for each packet ... a unique packet identifier... by extracting at least a portion of the contents of the respective packet to serve as [the] packet identifier, wherein [the] at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the packet"; (2) "[forwarding] the aggregate traffic streams to the destination point without adding any data elements to the packets of the aggregate traffic streams".

There is no mention in the cited passages and figures of Buchholz et al., nor anywhere else in the Buchholz et al. patent, of the concept of generating a unique packet identifier for a packet by extracting a portion of the contents of the packet to serve as the unique packet identifier, where this portion is not specifically designated for packet identification purposes within the packet, as claimed in claims 1 and 36.

Firstly, Buchholz et al. do not teach a transmission device that is operative to "*generate* for each packet ... a unique packet identifier". Rather, as discussed at col. 4, line 57, to col. 6, line 4, the packets exchanged between the user modules (UM 12) and the control module (CM 10) include in their header (packet header and reassembly header) all of the information used for packet identification by the various modules (also see Figures 4-7).

Secondly, Buchholz et al. do not disclose "extracting a portion of the contents of the packet to serve as the unique packet identifier, *where this portion is not specifically designated for packet identification purposes within the packet*". Rather, Buchholz et al. teach that when a UM 12 is transmitting a packet received from a user device 14 to the CM 10, or when the CM 10 is

transmitting a packet received from the packet data network 18 to a UM 12, the packet is identified as a function of source (i.e. on the basis of the source address stored in the packet header) and data packet sequence information is generated for the identified packet in order to preserve the sequential relationship of the packet with respect to all of the other packets being transmitted (see Abstract, col. 6, line 20 to col. 8, line 34 and col. 9, lines 4-43). There is little to no discussion in Buchholz et al. of how this sequence information is generated. When the CM 10 receives a packet from one of the UMs 12, or when a UM 12 receives a packet from the CM 10, this sequence information is admittedly read from the Stream Sequence Number field of the reassembly header of the packet (see col. 10, lines 15-23). However, this operation is clearly distinct from that of *generating a unique packet identifier for a packet by extracting a portion of the contents of the packet not specifically designated for packet identification purposes to serve as the unique packet identifier.*

Furthermore, Buchholz et al. do not teach nor suggest the concept of *forwarding aggregate traffic streams to the destination point without adding any data elements to the packets of the aggregate traffic streams*, as also claimed in claims 1 and 36. Rather, Buchholz et al. teach away from this concept, since when a UM 12 is transmitting a packet received from a user device 14 to the CM 10, or when the CM 10 is transmitting a packet received from the packet data network 18 to a UM 12, the generated sequence information, as well as other data, is written into the dedicated fields in the packet's reassembly header, which is constructed prior to transmission of the packet (see col. 8, lines 14-28, Figs. 8 and 13). Buchholz et al. therefore cannot possibly be found to teach or suggest forwarding each aggregate traffic stream to the destination point without adding any data elements to the packets of the aggregate traffic stream.

In light of the foregoing, the Applicant respectfully submits that Buchholz et al. neither explicitly nor implicitly teach all of the limitations of

independent claims 1 and 36, such that the criteria for satisfying a rejection under 35 U.S.C. §102 have not been met[1]. Accordingly, the subject matter of claims 1 and 36 is believed to be novel and non-obvious over Buchholz et al.

In light of the foregoing, claims 2-7 and 39-41, which depend either directly or indirectly from claim 1 and therefore incorporate all of the limitations of base claim 1, are believed to be novel and non-obvious over both Buchholz et al. and the combination of Buchholz et al. and Davies et al.

The Examiner's attention is directed towards the following limitations of claim 8 [emphasis added]:

> 8. A method for forwarding aggregate traffic streams from a transmission device [...] comprising:
>
> [...]
>
> a) generating for each packet of each aggregate data stream passing from said input to said output a unique packet identifier for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
>
> b) [...]
>
> c) forwarding the aggregate traffic streams to the destination point **without adding any data elements to the packets of the aggregate traffic streams.**

For the same reasons set forth above with respect to claims 1 and 36, the Applicant respectfully submits that claim 8 is neither anticipated nor rendered obvious by Buchholz et al.

In light of the foregoing, claims 9-14 and 42, which depend either directly or indirectly from independent claim 8 and therefore incorporate all of the limitations of claim 8, are believed to be novel and non-obvious over both Buchholz et al. and the combination of Buchholz et al. and Davies et al.

[1] According to MPEP 706.02, 8th ed., in order for the Examiner to cite a rejection under U.S.C. 102, "The reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present."

The Examiner's attention is directed to the following limitations of claim 43 [emphasis added]:

> 43. A data transmission system comprising:
> [...]
> – each of said plurality of transmission nodes comprising:
> [...]
> c) a control unit operative to:
> i) generate for each packet of each aggregate traffic stream passing from said input means to said output means a unique packet identifier for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
> ii) [...]
> iii) forward the aggregate traffic streams to the destination point **without adding any data elements to the packets of the aggregate traffic streams.**

For the same reasons set forth above with respect to claims 1 and 36, the Applicant respectfully submits that claim 43 is neither anticipated nor rendered obvious by Buchholz et al.

The Examiner is therefore respectfully requested to withdraw the rejection under 35 U.S.C. §102 of claims 1, 8, 36 and 39-43 over Buchholz et al., as well as the rejection under 35 U.S.C. §103 of claims 2-7 and 9-14 over Buchholz et al. in view of Davies et al.

C) Rejection of claims 1-14, 36 and 39-43 under 35 USC §103(a)

In the Office Action, the Examiner has also reiterated his rejection of claims 1-14, 36 and 39-43 under 35 U.S.C. §103(a) as being unpatentable over Davies et al. in view of U.S. Patent 6,473,425 (hereinafter referred to as Bellaton et al.). As discussed below, the Applicant continues to disagree with

this rejection and submits that the claims of the application distinguish patentably over the combination of Davies et al. and Bellaton et al.

The Examiner's attention is directed towards the following limitations of claims 1 and 36 [emphasis added]:

> 1. A transmission device [...] comprising:
> [...]
> – a control unit operative to:
> a) **generate for each packet** of each aggregate traffic stream passing from said input to said output **a unique packet identifier** for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
> [...].
>
> 36. A transmission device [...] comprising:
> [...]
> – control means operative to:
> a) **generate for each packet** of each aggregate traffic stream passing from said input means to said output means **a unique packet identifier** for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
> [...].

The Applicant respectfully submits that the combination of Davies et al. and Bellaton et al. does not disclose, teach nor suggest the above-emphasized limitation of claims 1 and 36. More specifically, neither Davies et al. nor Bellaton et al. disclose "generat[ing] for each packet...a unique packet identifier...by extracting at least a portion of the contents of the respective packet to serve as [the] packet identifier, wherein [the] at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet".

As admitted to by the Examiner at page 7 of the Office Action, there is no teaching or suggestion in the Davies et al. patent of the concept of generating a unique identifier for each packet by extracting a portion of the contents of the packet to serve as the packet identifier, where this portion is not specifically designated for packet identification purposes within the respective packet.

Furthermore, the Applicant respectfully submits that there is no such teaching or suggestion in the Bellaton et al. patent either. In the Office Action, the Examiner has cited Figures 1-11 and col. 1, line 5 to col. 11, line 3 of Bellaton et al., which constitutes the entirety of the description and figures of the patent, as disclosing the above-emphasized limitations of claims 1 and 36. However, the Applicant has been unable to find any teaching or suggestion in the prior art reference of these limitations. The Applicant thus respectfully invites the Examiner to more clearly specify where these features are disclosed in the Bellaton et al. patent, by citing the one or more particular passages of the reference found by the Examiner to be relevant to the invention claimed in claims 1 and 36.

Contrary to the finding of the Examiner, Bellaton et al. relate to a mechanism for dispatching a sequence of packets via a telecommunications network, where the dispatching mechanism uses a queue for holding packets awaiting transmission and a queue controller for comparing packet parameters in order to determine whether to queue or to drop new packets. In the context of a TCP environment, Bellaton et al. discuss filling data fields such as the source IP address, the destination IP address, the source TCP port and the destination TCP port in a queue control record by copying data from the header of TCP packets and/or associated IP datagrams to obtain a respective source IP address, destination IP address, source TCP port, destination TCP port for the queue control record (see column 8, line 61 to column 9, line 11). There is neither discussion nor suggestion in the Bellaton et al. patent of the concept of *generating* a unique packet identifier by

extracting a portion of the contents of the packet to serve as the packet identifier, *where this portion is not specifically designated for packet identification purposes within the respective packet.*

In light of the foregoing, the Applicant respectfully submits that the combination of Davies et al. and Bellaton et al. does not disclose, teach nor suggest all of the limitations of claims 1 and 36, such that at least one criterion for establishing a *prima facie* case of obviousness in accordance with MPEP 706.02(j) has not been satisfied[2]. Accordingly, the subject matter of claims 1 and 36 is believed to distinguish patentably over the combination of Davies et al. and Bellaton et al.

Claims 2-7 and 39-41 depend either directly or indirectly from independent claim 1, and therefore incorporate all of the limitations of base claim 1. As such, for the same reasons set forth above with regard to claim 1, the Applicant respectfully submits that dependent claims 2-7 and 39-41 distinguish patentably over the combination of Davies et al. and Bellaton et al.

The Examiner's attention is directed towards the following limitations of claim 8 [emphasis added]:

> 8. A method for forwarding aggregate traffic streams from a transmission device [...] comprising:
>
> [...]
>
> a) generating for each packet of each aggregate data stream passing from said input to said output a unique packet identifier for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
>
> [...].

[2] For the Examiner to establish a *prime facie* case of obviousness, three criteria must be considered: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all of the claim limitations. MPEP §§ 706.02(j), 2142 (8th ed.).

For the same reasons set forth above with respect to claims 1 and 36, the Applicant respectfully submits that the subject matter of independent claim 8 distinguishes patentably over the combination of Davies et al. and Bellaton et al.

Claims 9-14 and 42 depend either directly or indirectly from independent claim 8, and therefore incorporate all of the limitations of base claim 8. As such, dependent claims 9-14 and 42 are also believed to distinguish patentably over the combination of Davies et al. and Bellaton et al.

The Examiner's attention is directed to the following limitations of claim 43 [emphasis added]:

> 43. A data transmission system comprising:
> [...]
> – each of said plurality of transmission nodes comprising:
> [...]
> c) a control unit operative to:
> i) generate for each packet of each aggregate traffic stream passing from said input means to said output means a unique packet identifier for distinguishing the respective packet from all of the other packets, **by extracting at least a portion of the contents of the respective packet to serve as said packet identifier, wherein said at least a portion of the contents of the respective packet is not specifically designated for packet identification purposes within the respective packet;**
> [...].

For the same reasons set forth above with respect to claims 1 and 36, the Applicant respectfully submits that the subject matter of independent claim 43 distinguishes patentably over the combination of Davies et al. and Bellaton et al.

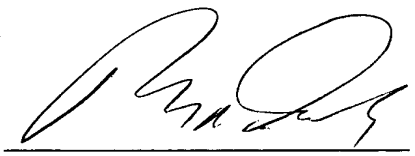
The Examiner is therefore respectfully requested to withdraw the rejection under 35 U.S.C. §103 of claims 1-14, 36 and 39-43 over Davies et al. in view of Bellaton et al.

CONCLUSION

In view of the foregoing, it is submitted that claims 1-14, 36 and 39-43 are in condition for allowance. Favorable reconsideration is requested. Allowance of claims 1-14, 36 and 39-43 at an early date is solicited.

If the claims of the application are not considered to be in full condition for allowance, for any reason, the Applicant respectfully requests the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims or in making constructive suggestions so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,
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Date: 12/02/2004

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